

ABSTRACT OF THE DISCLOSURE

There is disclosed a radio communication system in which a constitution of a base station and further a control station can be simplified. A radio communication system according to the present invention converts a received signal received by a plurality of antenna elements in a base station to a signal of different frequency band, and then conflates the converted signal in order to generate sub-carrier wave multiplex signal. The signal is converted to an optical signal, and then the optical signal is transmitted to a control station via an optical fiber. Or the control station performs weighting to phase of the transmitted signal transmitted from a plurality of antennas of a base station, and then performs frequency conversion to different frequency band, and then conflates the converted signal in order to generate the sub-carrier wave multiplex signal. The signal is converted to an optical signal, and then an optical signal is transmitted to the base station side via the optical fiber. The control station and the base station divides the received sub-carrier wave multiplex signal by each frequency band, and then the frequency of the divided signals are converted to the same frequency band in order to generate the transmitted/received signal of each antenna element. By such a constitution, it is possible to reduce constituent of the optical transmission components to the minimum and to simplify the constitution of the base station. Furthermore, it is possible to maintain the relative phase difference and the relative intensity of the transmitted/received signal of each antenna element. Because of this, it is possible to estimate an arrival direction of the received signal and to control radiation beam pattern of the transmitted signal.

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